

REMARKS/ARGUMENTS

Claims 1-8 are active in this case. Claim 5 is amended for clarity.

No new matter is added by this amendment.

Applicants thank the Examiner for discussing the issues raised in the Action with their undersigned representative. During the initial part of this discussion, the undersigned noted the Examiner's identification of elected and non-elected subject matter and explained that a Restriction Requirement was never issued and as such the Applicants never had the opportunity to make an election. It was also explained this is improper and explained if an election of subject matter is required, the Office Action should be withdrawn and submit a Restriction Requirement for the Applicants consideration.

In response, the reasoning behind the restriction was based on the assertion of unpatentability in view of the Seitz publication discussed further below. Applicants reiterate their request, now in writing, that the restriction requirement be withdrawn and further in view of the differences between the claimed invention and the the cited Seitz publication.

Claims 1, 2, and 5-8 are patentable in view of the Seitz publication, by itself, or in view of the McMurry Organic Chemistry book.

First, it should be appreciated that the Seitz publication was already discussed this reference on page 1 of the specification and, in fact, the Applicants cited this document to the Patent Office. While the reference is in German, it does not describe all of the limitations of the claims and, in particular, the manner in which the reactants are mixed for the reaction. Specifically, as he has already acknowledged on page 6 of the Office Action, Seitz does not describe the same mixing procedure, which was deemed obvious. However, notwithstanding that the conclusion in the Office Action is not supported, the specification provides examples in which the mixing procedure of the claims were compared to other mixing procedures and

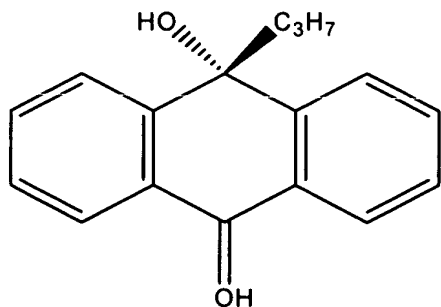
the mixing procedures of the claims resulted in quite significant results. Notably, the procedures of Examples 1 and 2 to Comparative Examples 1 and 2 for the purposes of supporting Claim 1; and Example 3 vs. Comparative Example 3 for the purposes of supporting Claim 5 (conducting the reaction in the presence of a quaternary ammonium compound).

Moreover, on page 686 (2nd col., 3rd line from the bottom) to page 687 (1st col, line 5), that the yield of the product from compound 1 was lower when the alkylating agent was benzyl chloride (48%), propyl iodide (40%) or allyl bromide (21%) compared to the situation where the alkylating agent was methyl iodide (98%) because of the formation of by-products such as compound 12 or compound 13 by dimerization or c-allylation. This is summarized in the Table below.

Alkylating Agent	Product	Yield
Methyl iodide	3a	98%
Benzyl chloride	3c	48%
Propyl iodide	3e	40%
Allyl bromide	3f	21%

Therefore, what Seitz teaches is that using chloride or bromide as opposed to an iodide as the alkylating agent yields unfavorable results.

When the present inventors used propyl bromide and butyl bromide by adding propyl bromide and butyl bromide to an alkali salt of an anthracenediol compound, the desired anthracene diether could not be obtained because of c-alkylation to yield the following compound as discussed in Comparative Examples 1 and 2.



Based on these observations, one would have been dissuaded from further studying this reaction, particularly in view of Seitz's conclusions. However, the inventors found that by conducting the process as set forth in the claims, the process was advantageous from the industrial standpoint and provided good yields of the desired anthracene diether with suppressing the formation of by-products. For example, as shown in the Example 1 of the present application, even when propyl bromide was used as the etherifying agent, the yield of the desired compound was as high as 60% and even higher in Example 6 (89%) with the aid of a phase transfer catalyst. There is nothing in Seitz which suggests such superior yields.

The high yields obtained with the claimed process clearly demonstrate the patentability of the claims, particularly in view of Seitz's teachings wherein the yield of compound 3e was 40% using propyl iodide as the alkylating agent (even if the differences in starting material are considered).

Withdrawal of the rejection based on Seitz alone is requested.

Turning to the rejection of Claims 3 and 4 in view of Seitz and McMurray, as outlined in the Official Action, this rejection was raised to allege that certain solvents in dependent claims 3 and 4 would have been obvious. However, McMurray does not address nor supplement the deficiencies of the Seitz publication, i.e., the manner in which the reactants are mixed for the reaction. Moreover, for the same reasons discussed above, the combination of Seitz and McMurray do not provide any suggestion for the superior and remarkable yields obtained with the claimed process.

Accordingly, the claims would not have been obvious in view of Seitz and McMurray as well. Withdrawal of this rejection is requested.

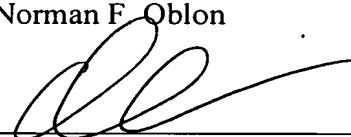
As to the rejection of Claims 1, 5 and 10 under 35 USC 112, second paragraph, the phrase "a substituent inert to etherification" is readily understood by one in this field as a group that is not reactive in an etherification reaction. Examples are also provided in the specification on page 7. Therefore, the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity.

Withdrawal of this rejection is requested.

A Notice of Allowance is requested.

Respectfully submitted,

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